Problem: Determine and plot the velocity of a free-falling object with quadratic drag over t = 0 to 25 seconds. Use m = 68.1 kg, c = 0.25 kg/s, and g = 9.81 m/s^2. The velocity is given by:

$$v = \sqrt{mg/c}\,\tanh\left(\sqrt{gc/m}\,t\right)$$

Solution: I used Matlab for the solution.

Here is my Command Window:

```
>> g=9.81;c=0.25;m=68.1;

>> t=[0:.25:25]';

>> v=sqrt(m*g/c)*tanh(sqrt(g*c/m)*t);

>> plot(t,v);grid minor; xlabel('time (sec)');ylabel('velocity (m/s)');title('sample problem')
```

Here is my plot: